The subjective well-being of children and young people in out of home care: Psychometric analyses of the "Your Life, Your Care" survey

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Abstract

In contrast to the burgeoning research on the subjective well-being (SWB) of children in the general population, the SWB of children and young people in out of home care (OHC) has received far less research and policy attention. To ensure that policy and practice interventions can effectively improve the lives of children and young people in OHC, there is an urgent need for reliable and valid measures of their SWB. The current study begins to address this knowledge gap, providing an in-depth examination of the psychometric properties of the "Your Life, Your Care" survey. The reliability and validity of the survey questions were examined using classic test theory, item response theory, confirmatory factor analysis and logistic regression. Analysing data from 1,221 participants aged 11-18 years, we found that all the survey questions were a reliable and valid measure of SWB except for questions on feelings about family contact and bullying. More importantly, the results indicated that SWB of children and young people in OHC was a multi-dimensional construct that can be operationally defined and measured as feeling good and functioning effectively at both individual and interpersonal levels. The theoretical, methodological and practical implications of these findings are discussed.

Keywords: children, flourishing, subjective well-being, out of home care, item response theory, confirmatory factor analysis

1. INTRODUCTION

1.1 Background

Growing up and living in challenging conditions and environments does not necessarily prevent individuals from flourishing. Indeed, there is evidence (e.g. Masten et al. 1990; Rutter 1987; Ungar 2004) that some children and young people achieve high levels of well-being despite experiencing significant life adversities. With the awareness that human assets and strengths (Seligman and Csikszentmihalyi 2000) should be understood and supported, governments in many parts of the world have supplemented economic indicators with more subjective measures of individual and societal well-being (e.g. Organisation for Economic Co-operation and Development 2018; Stiglitz et al. 2008; Weijers and Jarden 2013; Allin and Hand 2017). In the United Kingdom, the Office of National Statistics (ONS) began the Measuring National Well-being Programme in 2010. The ONS engaged in public debates and consultations about "What Matters to People", from which a proposed framework for measuring national well-being was published (ONS 2012). Subsequently, annual reports on the nation's well-being have been released, as well as a range of reports highlighting relevant factors (e.g. loneliness) that detrimentally affect well-being (ONS 2018a).

Alongside the public and government interest in understanding adult subjective well-being (SWB), the research on the SWB of children has rapidly increased (e.g. Ben-Arieh 2005; Bradshaw 2016; Casas and Rees 2015). For instance, in England, The Children's Society (2008) and the University of York developed with children a "Good Childhood Index". This Index evaluates children's SWB using a basket of indicators on family, home, health, friends, time use, money and things, future, choice, appearance and school. Results from the Index have been published annually in The Good Childhood Report (The Children's Society 2018), enabling trends and variations in child well-being to be examined and compared regularly.

Likewise, three waves of the International Survey of Children's Well-being[1] have asked children their views on their lives and well-being, producing cross-national comparable results from 17 countries.

In contrast, the SWB of children and young people in out of home care (OHC) has received far less attention. In England, children in OHC are most often placed with foster families because of maltreatment by their birth families. Social workers have been involved with the family and a court has made the decision that a child needs to be removed from the birth family on either a temporary or permanent basis. There are statistical publications on the number of children in care (currently about 72,000 children) as well as the type and number of placements and broad outcomes (Department for Education 2018). And yet, the measures are predominantly biased towards negative broad outcomes, e.g. teenage pregnancy, involvement with the justice system, and so forth. With a few notable exceptions (e.g. Sebba et al. 2015), most studies using national-level data have given a picture of poor outcomes and a failing care system — one that should be avoided if at all possible. There are no data collected at a national level on children and young people's own perspectives of their OHC experiences and whether they are enabled to flourish in care and experience similar levels of SWB as their peers in the general population.

Driven by this knowledge gap, our research on the SWB of children and young people in OHC began after being commissioned to identify local authorities in England which were providing positive OHC experiences. We quickly realised that there were no data collected that could differentiate local authorities based on children's SWB. In a partnership with Coran Voice, a children's rights charity, we set out to discover what mattered to children and young people in OHC. Theoretically, our research has been influenced by Seligman's work (2011) on

[1] See International Survey of Children's Well-being (ISCWB) http://www.isciweb.org/

well-being, believing that children in OHC should be enabled to flourish (i.e. having high well-being), and by theories on resilience and recovery from trauma (e.g. Gilligan 2000; Ungar et al. 2013). The latter theories are particularly pertinent for children in OHC, as the majority have experienced abuse and/or trauma of some kind. Underpinning our work was the United Nations Convention on the Rights of the Child (UNCRC 1991), especially Article 12 on rights of ensuring children are listened to and involved in decisions about their lives.

1.2 Survey development and content

To understand the SWB of children and young people in OHC, we developed an on-line survey named "Your Life, Your Care". This survey contains a set of questions generated from systematic literature reviews, a round table with professionals, but most importantly from focus groups with 140 children and young people in OHC (Selwyn et al. 2017; Wood and Selwyn 2017). Children and young people in the focus groups identified areas that they held in common with peers in the general population, but also highlighted other issues that were unique to their OHC experiences. For example, they were concerned about the stigma they experienced and wanted to know why they were in OHC and to be able to control who knew about their situations. They were also concerned about the contact arrangements with their family members, their relationships with carers and social workers, and having access to appropriate support.

After further consultation with children and young people in OHC, the wording of the questions was refined, and the questions were piloted (including using cognitive interviewing) and edited again. Ten questions in the survey are asked of children and young people in the general population on liking school and carers supporting education (The Health Behaviour of

School-aged Children),[2] having a good friend (Millennium Cohort Study),[3] talking to adults you live with about things that matter, overall life satisfaction, happiness, feeling things done in life worthwhile (ONS, 2018b), being content with appearance, positive about the future (The Children's Society),[4] and feeling safe at home (ISCWB).[5] Children and young people in OHC who participated in our focus groups wanted these questions to be included in the survey. To those were added 27 questions that were developed with the focus groups covering the following issues: being trusted and given opportunities, contact with family members, feeling settled, having a pet, knowing the reasons for care, fear of bullying and of feeling different, and being able to access the Internet and the natural world (e.g. woods, beaches). We therefore defined SWB, following Seligman (2002, 2011), Huppert (2009) and others who view SWB as a multidimensional concept, as ***feeling good and functioning effectively at both individual and interpersonal levels.***

Over a two-year period, 2016-2017, the survey was completed by 5,500 children and young people in OHC in 30 local authorities in England and Wales and since then commissioned annually by individual local authorities (see Selwyn et al. 2018). Descriptive analyses of the survey responses provided local authorities with information on the traits of children with low vs. high levels of SWB, highlighted areas where they were more (or less) likely to provide positive responses, and whenever possible, provided meaningful comparisons with the average scores of peers in the general population and peers in other OHC local authorities. During the initial focus groups, children had told us that they were "fed up" with completing surveys where they never saw the results, and nothing changed. Therefore, a separate summary, *You Said*, was sent to children and young people in each participating local

[2] See http://www.hbsc.org
[3] See www.cls.ioe.ac.uk
[4] The Children's Society, *Good Childhood Report 2017*, see www.childrenssociety.org.uk
[5] See International Survey of Children's Well-being www.isciweb.org

authority, along with a *We Will* statement setting out what the local authority promised to do in response.

Feedback from children and young people, as well as the local authorities, indicated that the survey has good *face validity*. Face validity came from: the survey questions having been created in the focus groups with children and young people, the vast majority of text responses provided by participants being overwhelmingly positive with some simply writing "Thank you", and managers in local authorities finding the survey helpful. The National Children's Bureau in the United Kingdom reviewed the assessment tools of SWB of children in OHC, and identified the "Your Life, Your Care" survey as the only inventory measuring positive outcomes (Ryder et al. 2017). Despite the preliminary success of implementing the survey and applying it to guide the local authorities' work, the psychometric properties of the survey questions have not yet been subject to in-depth examination — a situation remedied by the analyses reported in this study.

1.3 Objective and aims

The overall objective of this study was to evaluate whether the "Your Life, Your Care" questions were a reliable and valid measure of SWB. Specifically, we aimed to: 1) examine the questions' internal consistency, internal structure and relations with other variables associated with SWB; 2) highlight indicators that could effectively identify the characteristics of children and young people in OHC with different levels of SWB; and 3) provide theoretical, methodological and practical advice for researchers, policy makers and local authorities to better appraise, understand and facilitate the healthy and positive development of children and young people in care.

2. METHODOLOGY

Our psychometric analyses of the survey questions were based upon the most recent *Standards for Educational and Psychological Testing* guideline, which has been jointly published by American Educational Research Association (AERA), American Psychological Association, National Council on Measurement in Education, and Joint Committee on Standards for Educational and Psychological Testing (2014). To avoid ambiguity, in the following analyses and writing, the *latent construct* refers to the concept of SWB and *dimensions* refer to the multiple components that make up SWB (i.e., feeling good and functioning effectively at individual and interpersonal levels; see details in Table 1). Within each dimension are several *indicators*, which are the questions in the "Your Life, Your Care" survey aiming to measure SWB.

We began with the tests of *reliability* with a focus on the internal consistency and precision of the SWB indicators and then moved on to examine *validity*, i.e. the degree to which the indicators can reflect the latent construct of interest (AERA et al. 2014). In this study, reliability was checked using the Classic Test Theory and Item Response Theory approaches; validity has been previously assessed in terms of face validity (Selwyn et al. 2017; Wood and Selwyn 2017) and was extended by examinations of the internal structure and the relationships with other variables associated with SWB.

Classic Test Theory (CTT). The CTT examined the internal homogeneity, consistency and precision of the SWB indicators in gauging the latent construct. A set of reliability coefficients, i.e. Alpha (α, Cronbach 1951; Kuder and Richardson 1937), Beta (β, Revelle 1979), Lambda (λ, Guttman 1945) and Omega (ω, McDonald 1978, 1999), were calculated.

Item Response Theory (IRT). In comparison with CTT, an advantage of IRT is its ability to take into consideration the characteristics of both the survey respondents and questions, when modelling the observed response patterns (de Ayala 2009). Moreover, in IRT, the probability of endorsing a positive response to a question is expressed as a logistic function of the latent construct and observable indicators (Finch and French 2015) — this enabled us to investigate the effectiveness of each indicator in distinguishing children and young people with low vs. high levels of SWB, as well as the dimensions that produced more or fewer positive responses.

Internal structure. The analysis of the internal structure of the SWB indicators aimed to address the issue of dimensionality. Whereas SWB is considered as an overall positive status by some researchers (e.g. Layard 2005; Fredrickson 2009), many others argue that SWB is a multi-dimensional concept with highly relevant but still distinct components (e.g. Keyes 2003; Seligman 2011). Our theoretical framework of SWB generated four possible dimensions (see details later). Two confirmatory factor analysis (CFA) models were tested and compared to measure these theorised dimensions of SWB.

Relations with other variables. A final validity test involved the examination of the convergence of the survey questions with other variables associated with SWB (i.e. gender, placement environment and quality of professional/carer relationships). The relative risk ratios of endorsing positive responses to those SWB questions as a function of these three variables were calculated using a set of logistic regressions.

3. DATASET

Participants. A total of 3,314 children and young people from 23 English and Welsh local authorities completed the "Your Life, Your Care" survey in 2017. Surveys were completed

privately in school or just before their bi-annual care reviews, sometimes with the help of the independent reviewing officer. Children and young people could choose to have a trusted adult present to help them with the survey. Each on-line survey had an opening page of information about the survey and a consent box to tick that allowed access to the survey questions. The development and use of the surveys had ethical approval from the ethics committee of School for Policy Studies at the University of Bristol. The average response rate was 34% with completion rates varying between 21% and 60%, depending on the local authority. The large difference in response rates was mainly due to the resources that individual local authorities could commit to the survey and the determination of specific individuals within local authorities for the survey to reach all their children and young people in OHC. It should also be noted that previous efforts to survey those in OHC, who are known to be a "hard-to-reach" group, have resulted in much lower response rates (e.g. Children's Commissioner for England 2015, which only had a response rate of 4%).

The age of the participants ranged from 4 to 18 years. In the analyses reported here, we focused on the 11-18 age group in which 1,953 children and young people responded. They were chosen for this analysis, as the survey for this age group contained the full set of SWB questions, including three core ONS (2018b) questions on happiness, life satisfaction and whether things done in life were worthwhile. The exact ages were not collected because participants were concerned that they remained anonymous. About 50% of the respondents were female, and 75% of the participants defined themselves as white and 25% as non-white. To deal with missing data, we only selected those responding to all the survey questions, leading to a total sample of 1,221 respondents. In comparison with the 732 individuals who missed one or more questions, the selected sample was not significantly different from the non-selected one in terms of gender (girls occupied 49% of the selected sample and 50% of the non-

selected sample) and ethnicity (non-white children occupied 25% of the selected sample and 27% of the non-selected sample).

Classification of survey questions. In total 37 questions made up the survey for children and young people aged 11-18 years, of which 25 were designed to measure the hypothesised multiple dimensions under the general concept of SWB, as well as five questions focusing on how the participants felt about their placement environment and seven on the quality of the relationship with their social workers and carers. To make the responses suitable for later analyses, they were dichotomised (see dichotomisation method in Table 1), with "0" indicating a negative response whereas "1" indicated a positive response. One question asked if the participant knew the identity of her/his social worker. If the answer to this question was "No", we imputed the value of "0" to the next two questions: "Do you trust the social worker you have now?" and "Is it easy to get in touch with your social worker?" Furthermore, the 25 questions were placed into one of the 2 (feeling vs. functioning) X 2 (individual vs. interpersonal) theorised dimensions of SWB (see Table 1).

(insert Table 1 here)

4. TESTS OF RELIABILITY

4.1 CTT

Coefficient α. The coefficient α measures the internal consistency of the SWB questions. Kuder–Richardson Formula 20 (KR-20), as a specific instance of coefficient α, is calculated when the indicators are dichotomous (Kuder and Richardson 1937). In this sample, the KR-20 statistics was .80 with the 95% confidence intervals ranging from .78 to .82. Moreover, as shown in Fig. 1, the coefficient α only increased slightly if the questions on "afraid of bullying" "seeing dad" "seeing mum" or "seeing siblings" were, respectively, removed from the survey.

However, the overall coefficient α decreased if any of the other 21 questions were removed. Together, the coefficient α of all 25 questions and the coefficients of the remaining questions if any one item was dropped both indicated that the questions had a high internal consistency.

(insert Fig. 1 here)

Coefficient β. Whilst coefficient α is the average of the correlations between all possible split-halves of the survey questions (Cronbach 1951), it often over-estimates their associations with the latent construct, especially when the questions are "factorised" (Revelle 1979; Revelle and Zinbarg 2009). To reflect this possibility, we tested coefficient β, which refers to the worst-split-half estimate generated by "partitioning the test into 2 sub-tests such that the between-test covariance is minimized" (Revelle 1979, p.60). In our study, the coefficient β was .74, which, as expected, was a score lower than the coefficient α. It indicates that, while the SWB questions still demonstrated a high internal consistency, there was the possibility that they might group into meaningful components of SWB.

Coefficient λ. In addition to the worst-split-half coefficient β, there are other ways of estimating the lower bounds of reliability. Guttman (1945) proposed six estimates (i.e. λ_1 to λ_6) for this purpose (in which, coefficient λ_3 is the same as coefficient α). Under the assumption that the total test variance is the sum of the true and the error variances between the questions, the six λ coefficients vary slightly in their ways of estimating the errors (Revelle and Zinbarg 2009). In our study, λ_1 to λ_6 were .77, .81, .80 (i.e. the same as coefficient α), .83, .79 and .82, respectively. They all passed the conventional threshold of .70 for a high internal consistency, suggesting that the questions were highly reliable indicators of SWB.

Coefficient ω. Instead of equating the total variance as a sum of true and error variances, McDonald (1978) proposed that the total variance is constituted by variances resulting from an

overall latent factor, partially shared common factors (i.e. factors influencing some but not all questions), unique factors (i.e. factors only affecting a particular question), as well as random errors (Revelle and Zinbarg 2009). The reliability score estimated according to this assumption is labelled as coefficient ω. In this study, the coefficient ω was .82, suggesting a high extent to which the questions gauged a common latent construct of SWB.

4.2 IRT

IRT is a type of latent trait analysis method (Fontanella et al. 2016), which has rapidly developed in recent decades in the context of computerised adaptive tests (Embretson and Reise 2000). It has been applied in a range of psychological studies on attitudes (Donovan et al. 2000), personality traits (Reise et al. 2018; Zickar 2001), attachment styles (Fraley et al. 2000), cognitive functions (Primi et al. 2016; DiBello and Stout 2007) and so on. The term "items" here refers to the questions that make up the "Your Life, Your Care" survey.

A typical IRT model provides information on a *theta*-parameter (θ) of a latent trait of interest (e.g. SWB) as well as three parameters of item characteristics, i.e. an *a*-parameter of item ***discrimination*** (if a question is able to reflect changes at different levels of the latent trait θ — SWB), a *b*-parameter of item ***difficulty*** (the probability of a respondent endorsing a positive response to a question given her/his SWB level), and a *c*-parameter of ***guessing*** (the probability of giving a positive response to a question by chance; see Finch and French 2015; Reckase 2009). In our study, there was no right or wrong answer to any of the questions (and indeed, responses to every question were optional). Hence, we examined a two-parameter logistic (2PL) model, in which the values of the discrimination parameter varied across items and the *c*-parameter of guessing was excluded.

The two parameters, item *difficulty* and *discrimination*, can be illustrated by a set of item characteristic curves (ICCs). An item has a lower difficulty value if the corresponding level of the latent characteristic (θ) is lower compared with that of the other items given the same probability of endorsement (Fox 2010). For example, as shown in Panel (a) of Fig. 2, when the probability of endorsement is 50%, the θ-values of Items 1, 2 and 3 are -1, 0 and 1, respectively (which are arbitrary values for illustrative purpose). Thus, Item 1 is the "easiest" whereas Item 3 is the "most difficult" with Item 2 in between. In other words, at the same probability of endorsement (e.g. 50%), the more left the ICC's position is on the X-axis, the lower the corresponding value of θ is, and the easier an item is.

An item's discrimination value is reflected by the slope of the corresponding ICC. And an item has a higher discrimination value compared with other items if its slope is steeper at the same difficulty level and latent characteristic. For example, as shown in Panel (b) of Fig. 2, when the SWB level is 0 and the probabilities of endorsing Items 4, 5 and 6 are equal to 50%, the slope of Item 4 is the steepest followed by those of Items 5 and 6. It means that one unit increase in the latent trait can lead to about 50% increase in the probability of endorsing Item 4 (i.e. almost 100% endorsement of this item) whereas the same amount of change can only lead to about 15% increase for the probability of endorsing Item 6 (i.e. about 65% of endorsement of this item). Therefore, Item 4 is the most effective in reflecting changes across different levels of SWB, whereas Item 6 is the least effective one.

(insert Fig. 2 here)

We used *MPlus 8* (Muthén and Muthén 1998-2011) to test the 2PL model, which took into consideration the fact that different items can have different discrimination scores. As shown in Fig. 3, the values of the latent characteristic (θ) of most items were less than zero (indicated by the positions of the dots) at the same probability of endorsement (i.e. 50%). It means that

even children and young people with a relatively low level of SWB still provided positive responses to these questions. However, the θ-values of "seeing mum/dad/siblings" were larger than zero, indicating that only young people with a high level of SWB responded positively to these questions.

In terms of item discrimination, the slopes of the ICCs indicated how effectively those items were able to identify different levels of SWB. Again, as shown in Fig. 3, the slopes of most ICCs of the items were similar and steep, except those of "seeing dad/mum/siblings" and "afraid of bullying". In other words, for these four questions, changes in SWB levels did not affect the probabilities of responding positively to them as much as influencing the positive responses to the other questions. For this reason, these four questions were less effective in reflecting changes in the SWB levels in comparison with other questions.

(insert Fig. 3 here)

Table 2 presents the difficulty and discrimination values of each SWB question. In theory, these values can range from negative to positive infinity; however, in practice, item difficulty values usually fall in the range between -3 and +3 with a higher value suggesting a more difficult item, and item discrimination values often fall in the range between 0 and 2 with a higher value indicating higher effectiveness in reflecting different levels of the latent characteristics (Guio et al. 2018). Corresponding to previous observations, the three questions about seeing family members had the highest difficulty values but the lowest discrimination values. Another striking result was that "afraid of bullying" was the easiest question (i.e. most children and young people in OHC responded that they did ***not*** worry about this situation) but also the least effective one in reflecting children and young people's changes across different levels of SWB. We will return to these findings in the discussion.

(insert Table 2 here)

The analyses thus far were concentrated on the reliability of the survey questions. The TCC approach demonstrated that the questions were consistent, precise and homogenous. The IRT approach further illustrated that there were variations in the possibilities of responding positively to these items when taking into consideration both the characteristics of the survey questions and the respondents. An interim conclusion here is that: if one is interested in understanding the overall SWB of children and young people in OHC, all the 25 survey questions can be implemented to serve this purpose; on the other hand, if one is interested in understanding the changes (or ideally, improvements) in the SWB of children and young people in care, questions with relatively higher discrimination values in the IRT test would be more useful to examine. In the following sections, we turn to test the validity of these SWB questions.

5. TESTS OF VALIDITY

5.1 Internal structure

One validity test is to examine the internal structure of the SWB questions. For this purpose, we performed two confirmatory factor analysis (CFA) models. We began with a baseline model (M_1), in which all the indicators loaded on a common latent factor named as SWB. The overall fit of M_1, i.e. $\chi^2[275] = 1193.52$, RMSEA = .052 (with 95% confidence intervals ranging from .049 to .055), CFI = .87, TLI = .86, was merely acceptable (Byrne 1994; Hu and Bentler 1998). In addition, all the indicators had acceptable loadings on the latent factor (i.e. loading ≥ .30; also see discussion in Section 6) except three questions, i.e. “seeing mum” (loading = .28), “seeing dad” (loading = .22) as well as “afraid of bullying” (loading = .22).

If SWB is not just one general latent construct but instead has multiple dimensions, there should be a statistically significant improvement over M_1 in M_2, in which the theorised four dimensions of SWB (see Table 1) were correlated but distinct factors. As predicted, M_2 demonstrated a significant improvement in terms of model fit, i.e. $\chi^2[269] = 964.42$, RMSEA = .046 (with 95% confidence intervals ranging from .043 to .049), CFI = .90, TLI = .89 ($\Delta\chi^2 = 229.10$, $\Delta df = 6$, $p < .001$). Moreover, with only two exceptions, "seeing dad" (loading = .26) and "afraid of bullying" (loading = .24), all the indicators had moderate to high loadings on their corresponding latent dimensions — a finding that will be discussed in detail in Section 6.

Take together, results of the CFAs suggested that, in general, the 25 questions were able to reflect the hypothesised four dimensions of SWB, i.e. feeling good and functioning effectively at both individual and interpersonal levels. However, "seeing dad" and "afraid of bullying" were not as capable as the other indicators belonging to the same dimension in gauging the effective functioning at an interpersonal level.

5.2 Relations with other variables

Another validity test concerned the convergence of the SWB questions with other variables crucial to the SWB of children and young people, i.e. gender (The Children's Society 2018; Kaye-Tzadok et al. 2017), placement environment (e.g. Main 2014) and the quality of professional/carer relationships provided by adults and social workers (Gittleman et al. 1998). To produce a parsimonious model with fewer degrees of freedom, we created two variables labelled as "professional/carer relationship" (*Mean* = .87, *SD* = .15) and "placement environment" (*Mean* = .82, *SD* = .21) by averaging the relevant questions as shown in Table 1.

To examine the convergence of the SWB questions with these variables, we performed a series of logistic regression models, in which a certain SWB question was the dependent

variable, while gender, placement environment, and professional/carer relationship were the independent variables. A certain SWB question was considered as demonstrating convergent validity if it was statistically significant as a function of any one out of these three independent variables. As shown in Table 3, all the SWB questions met this criterion.

(insert Table 3 here)

6. SUMMARY OF PSYCHOMETRIC PROPERTIES

In Table 4, we summarise the psychometric properties of each SWB question based on the reliability and validity tests in previous sections. Column 1 shows the results of alpha-drop: the overall alpha coefficient would decrease if any of the questions with the label "decrease" were removed, but only increase slightly if the questions with the label of "increase" were excluded. Column 2 represents the item difficulty values based on IRT. According to results in Table 2, a question was considered as "easy" if its difficulty value was below -2, "moderate" if between -2 and 0, and "hard" if above 0. Thus, the three questions about seeing family members were considered as being difficult. The next column shows the item discrimination classifications, again, according to the IRT results shown in Table 2. A question was considered as "not effective" "moderately effective" or "very effective" in identifying different levels and changes of SWB with the cut-off points of .40 and .70, respectively. The questions about "seeing family members" and "afraid of bullying" were less effective in this sense than the other questions. Columns 4 and 5 present the results from the CFAs. Following the conventions (e.g. Hair et al. 2014; Kline 2016), we considered a question as having a low, moderate or high standardised loading on its corresponding dimension when the loading was below .30, between .30 and .70, or above .70, respectively. As shown, most questions loaded moderately or highly on the overall SWB latent construct or their corresponding dimensions of SWB, except the questions on "seeing dad" "seeing mum" and "afraid of bullying". Finally, we examined the relations of

these questions with three variables critical for SWB, i.e. gender, placement environment and quality of professional/carer relationships. All the questions were a significant function of at least one of the three variables.

Overall, the results demonstrated that most survey questions were reliable and valid indicators of the SWB of children and young people in OHC. Nevertheless, the questions on seeing family members (father, mother and siblings) and afraid of bullying were less reliable and valid in comparison with the other survey questions. We discussed the implications of these results in the next section.

(insert Table 4 here)

7. DISCUSSION

Children and young people in OHC are some of the most vulnerable groups in our society, and therefore, it is remarkable that we do not know if they feel that they are supported and encouraged to flourish in OHC. We do not know whether a major intervention in their lives (removing them from their birth families) has been helpful from their own perspective. Neither do we know whether policy interventions, such as "Staying Put" (i.e. additional funding to enable young people to remain with their carers up to the age of 25 years old rather than leaving at 18 years old), can improve the SWB of those care leavers. The National Audit Office (2019) raised concerns over the lack of indicators on the efficacy of the care system. It argued that indicators of effectiveness are needed to ensure that the £4.2 billion spent by local authorities in England on the care system achieves the Government's stated objectives of improving the quality of care and stability of placements. Organisations such as the Alliance for Children in Care and Care Leavers (2016) have also campaigned for children and young people's SWB to be one of the key indicators of the effectiveness of care that governments should collect and

report regularly. There undoubtedly is a pressing need for children and young people in OHC to have their own reliable and valid measures of SWB.

Overall, the results reported in this study gave us greater confidence in the design, content and implementation of the "Your Life, Your Care" survey as a psychometrically robust tool to assess the SWB of children and young people in OHC. It is clear that this group of young persons, whilst sharing some of the same indicators of SWB as their peers in the general population, had other concerns that were unique to their situations and to their SWB, such as having supportive carers. Most survey questions were internally consistent and precise in gauging SWB. Noteworthy exceptions were the questions on contact with family members and fear of bullying. Why did these questions fail to show reliability and validity as other questions did, especially when children and young people in OHC had identified these issues as crucial to their lives?

We believe that the discrepancy in reliability and validity is probably due to two reasons. First, regarding questions on contact with family members, dichotomising responses to these questions is likely to over-simplify complex family relationships. In the survey, positive responses indicated satisfaction with the frequency of contact with family members, whereas negative responses covered a mixture of seeing family members too little, too much or not seeing them at all. Text comments provided more information about why children and young people did not see their family members. For example, the option "not seeing father/mother at all" was selected, because the parent(s) had died or their whereabouts or identities (particularly fathers) were unknown. Contact was also not occurring because the young person had decided that s/he did not want to see the parent(s), or conversely, the parent(s) refused to see the child. Occasionally, all contacts had been prohibited by the courts. Hence, a "negative" response might be a positive choice made by a child or young person who had decided that contact with

family members was not beneficial. To date, however, we have not been able to create survey questions that can capture all these complex situations without causing distress. We suggest that future research is needed to explore how questions on family relationships and contacts could be better worded, so that children and young people's feelings about this important area of their lives can be more accurately represented.

Second, regarding the question on fear of bullying, perhaps children and young people in OHC placed it lower down the hierarchy of concerns, as other issues were of greater importance to them in comparison with their peers in the general population. For children and young people in OHC, the relationships with their carers, such as being able to talk to them about things that mattered, feeling that they were trusted and having a trusted adult in their lives, were more important indicators of higher SWB. Most young persons in the general population would expect that their parent(s) could fulfil the role of "trusted adult(s)" and satisfy their needs for intimate family relationships. In contrast, for children and young people in OHC, especially those who had frequent changes of placement or social workers, the presence of such a trusted adult in their lives was not something that they could take for granted.

Nevertheless, bullying is known to have a detrimental impact on child well-being, and it is a risk factor for low SWB in the general child population (Bradshaw et al. 2017). The ONS (2018b) publishes data on bullying in the United Kingdom general child population from a question that asks children about the frequency of bullying. Our survey question differs as it asks about whether children are afraid to go to school because of bullying — a focus on the impact of bullying rather than frequency. The question had been devised that way based upon children's advice, as they said that one experience of bullying could be just as detrimental as more frequent incidents. Although the questions on bullying differ, an approximate comparison can be made between the 88% of children in the general population who reported not having

been bullied in the previous six months and the smaller proportion (76%) of young people in OHC who felt they were *not* afraid to go to school because of bullying. It seems that children in OHC experienced more bullying compared with their peers in the general population. We suggest that future research is needed to examine the role of bullying in SWB of children and young people in OHC using larger and more diverse samples.

Statistically, one may argue that questions on fear of bullying and family contact should be removed from the survey. And yet, we suggest keeping these questions for two reasons. First, children and young people who took part in the initial focus groups that created this survey felt that these issues were important (Selwyn et al. 2017; Wood and Selwyn 2017). Second, there were large variations in the responses across local authorities. In some local authorities, larger proportions of children and young people than the average reported no contact with either parent or felt that they were having "too much" or "too little" contact. Such information has prompted participating local authorities to re-examine their contact plans and check if their assumptions that the planned arrangements were working well were correct. Such feedback has led to positive practice changes in the local authorities for their children and young people.

Unlike adult flourishing models (see a review by Hone et al. 2014) where it is unknown whether the concepts reflect most people's understanding of what it is to flourish, the "Your Life Your Care" survey benefits from being created with children and young people in OHC. The results supported our theoretical position that children and young people's SWB is about feeling good and functioning effectively at both individual and interpersonal levels. Bronfenbrenner (1979) argued that child development should be studied in a broad "person-process-context-time tableaux". Drawing upon both our results and Bronfenbrenner (1979)'s arguments, Fig.4 presents a model summarising the pathways to flourishing in OHC, where the

survey questions are placed at both personal, social and contextual layers. In addition to the indicators of the four tested dimensions of SWB, the survey questions can be further classified into smaller sub-domains of well-being. For instance, the perceptions of "life getting better" and "positive about future" are indicators of feeling good at an individual level, which can also be seen as indicators of the sub-domain called "optimism". Positive professional/carer relationships and a nice placement environment also contribute to flourishing in OHC. Future research could test out whether this refined conceptual model is acceptable and understandable to OHC child populations in other social and cultural contexts.

(insert Fig. 4 here)

For well-being outcomes to guide policy and practice interventions effectively, the measurement tools need to be reliable and valid (Diener et al. 2009). Realising the limitations of traditional objective measures, governments and local authorities need more guidance on how to improve the SWB of the lives of children and young people in care. Debates about what domains should be measured for SWB and the statistical and methodological challenges associated with its scientific measurements are on-going (Bache and Reardon 2013; Cooke et al. 2016; Forgeard et al. 2011). Nevertheless, as a meaningful initial attempt to address this challenge, our current study provided an in-depth analysis of the psychometric properties of the questions in the "Your Life, Your Care" survey. It also proposed a meaningful conceptualisation of the multiple dimensions that should be considered when assessing flourishing for children and young people in OHC. Based on this work, in the future, we will continue exploring if the survey questions are statistically robust when taking into consideration children and young people's length of time in care, types of placement (foster or residential), age at which they entered care and so forth. In addition, we also intend to examine the impact of the survey findings on all beneficiaries: children and young people as well as

stakeholders within the local authorities. It is important that, in national debates on the merits or disadvantages of the care system, children and young people's voices are heard.

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Conflict of interest

The authors declare that they have no conflict of interest.

Table 1

Dichotomisation and classification scheme of survey questions

Classification		Label	Question	Negative response (coded as "0")	Positive response (coded as "1")	% positive
Feeling good	Individual level	worthwhile	Overall, to what extent do you feel things you do in your life are worthwhile?	Low	High/Moderate	88.4
		life better	To what extent do you think life is getting better?	No change/A bit/A lot worse	A lot/A bit better	80.8
		happy	How happy did you feel yesterday?	Low	High/Moderate	81.1
		life satisfaction	How satisfied are you with your life as a whole?	Low	High/Moderate	84.1
		positive	How positive are you about your future?	Low	High/Moderate	88.2
		appearance	How happy are you with the way you look?	Unhappy	Happy	83.9
		worries	Do you worry about feelings or behaviours?	All or most of the time	Sometimes/Hardly ever/Never	87.8
	Interpersonal level	afraid of bullying	Do you ever feel afraid to go to school because of bullying?	All or most of the time /Sometimes	Hardly ever/Never	76.4
		stigma	Do adults do things that make you feel embarrassed about being in care?	Yes	No	87.5
		see mum	Do you see your mother...	Too little/Too much/Cannot see	Just right	40.3
		see dad	Do you see your father...	Too little/Too much/Cannot see	Just right	24.8
		see sibs	If you have brothers or sisters, do you see them...	Too little/Too much/Cannot see	Just right	44.9
		trust carer	Do you trust the adults you live with?	Hardly ever/Never	Always/Sometimes	94.7
		trusted adult	Do you have an adult who you trust?	No	Yes	90.8
		sw trust	Do you trust the social worker you have now?	Hardly ever/Never	Always/Sometimes	83.0
Functioning effectively	Individual level	outdoor	Do you explore the outdoors?	Hardly ever/Never	Most/Sometimes	88.7
		parity	Do you do similar things to your friends?	Hardly ever/Never	Most/Sometimes	83.5
		learn life skills	Do you get to practice life skills	Hardly ever/Never	Most/Sometimes	89.0
		hobby	Do you spend time on your own hobbies or actives?	Hardly ever/Never	Most/Sometimes	92.5
	Interpersonal level	second chance	Do you get a second chance if you have done something wrong?	Hardly ever/Never	Most/Sometimes	92.4
		talk carer	Do you talk with your carer about things that matter?	Hardly ever/Never	Frequently	68.1
		like school	How much do you like school or college?	Not like school	A lot/A bit	77.3

		included in decisions	Do you feel included in decisions?	Feel not involved	Always/Sometimes	86.9
		trusted	Do you get the chance to show you can be trusted?	Hardly ever/Never	Most/Sometimes	89.8
		friends	Do you have a really good friend?	No	Yes	90.7
Placement environment		bedroom	Do you like your bedroom in the home you live in now?	No	Yes	93.4
		settled	Do you feel settled in the home you live in?	Sometimes/Hardly ever/Never	Always	76.2
		safe	Do you feel safe in the home you live in?	Sometimes/Hardly ever/Never	Always	87.6
		pet	Do you have a pet where you live?	No	Yes	61.5
		internet	Can you connect to the internet where you live?	No	Yes	91.2
Quality of professional/carer relationships		notice	Do the adults you live with notice how you are feeling?	Hardly ever/Never	Always/Sometimes	91.7
		adult interested	Do the adults you live with show an interest in what you are doing at school or college?	Hardly ever/Never	Always/Sometimes	95.1
		explain	Has someone explained why you are in care?	Not fully explained	Explained	80.8
		speak sw	Do you know that you can ask to speak to your social worker on your own?	No, I don't know this	Yes, I do know this	97.3
		number sw	How many social workers have you had in the last 12 months?	None/3+ social workers	1-2 social workers	74.5
		know sw	Do you know who your social worker is now?	No	Yes	94.3
		sw touch	Is it easy to get in touch with your social worker?	Hardly ever/Never	Always/Sometimes	78.5

Note: "sw" refers to "social worker(s)" and "sibs" refers to "siblings". The dichotomisation scheme here of the three core ONS questions on happiness, life satisfaction and things done in life worthwhile was consistent with the one used by ONS (2018b).

Table 2

Difficulty and discrimination values of the SWB questions

SWB question	Difficulty	SWB question	Discrimination
see dad	*3.10*	*afraid of bullying*	*0.22*
see mum	*0.88*	*see dad*	*0.23*
see sibs	*0.41*	*see mum*	*0.29*
talk carer	-0.95	*see sibs*	*0.34*
life satisfaction	-1.15	learn life skills	0.46
happy	-1.16	like school	0.47
life better	-1.30	worries	0.50
appearance	-1.38	talk carer	0.57
positive	-1.43	parity	0.60
worthwhile	-1.60	outdoor	0.61
sw trust	-1.70	stigma	0.62
like school	-1.77	friends	0.65
trusted	-1.79	sw trust	0.68
trusted adult	-1.81	hobby	0.72
included in decisions	-1.82	included in decisions	0.78
parity	-1.89	life better	0.90
second chance	-2.07	second chance	0.96
stigma	-2.18	trust carer	0.98
trust carer	-2.31	trusted	1.01
outdoor	-2.32	appearance	1.03
friends	-2.42	trusted adult	1.09
hobby	-2.47	worthwhile	1.12
worries	-2.60	happy	1.17
learn life skills	-2.96	positive	1.49
afraid of bullying	*-3.31*	life satisfaction	1.75

Note: "sw" refers to "social worker(s)" and "sibs" refers to "siblings".

Table 3

Convergence with other three variables associated with SWB

SWB questions (dependent variables)	Variables associated with SWB (independent variables)					
	Gender		Placement environment		Professional/ carer relationship	
	B	***SE***	***B***	***SE***	***B***	***SE***
worthwhile	.35	.19	1.94**	.39	2.34**	.53
life better	.28	.16	2.62**	.34	2.29**	.47
happy	.83**	.16	2.68**	.35	1.83**	.48
life satisfaction	.45**	.17	3.06**	.37	3.03**	.50
positive	.58**	.19	2.71**	.39	2.22**	.54
appearance	1.24**	.18	1.95**	.36	1.73**	.50
worries	.68**	.19	1.10**	.39	2.26**	.53
afraid of bullying	.63**	.14	.58	.32	1.42**	.44
stigma	.64**	.19	1.91**	.38	2.83**	.52
see mum	-.18	.12	.81**	.30	1.31**	.42
see dad	-.13	.13	.81*	.35	.08**	.46
see sibs	.06	.12	1.22**	.30	1.28**	.41
trust carer	.10	.30	5.04**	.58	4.09**	.77
trusted adult	-.18	.22	3.26**	.43	3.89**	.60
sw trust	-.010	.18	-.26	.42	9.27**	.65
outdoor	-.05	.19	2.48**	.39	1.78**	.55
parity	.01	.16	2.08**	.35	2.80**	.48
learn life skills	-.39*	.19	1.00**	.41	2.83**	.54
hobby	.08	.23	1.45**	.46	3.05**	.61
second chance	.06	.23	2.19**	.45	3.68**	.61
talk carer	-.03	.13	1.78**	.31	2.66**	.42
like school	-.04	.14	.85**	.32	1.70**	.44
included in decisions	.04	.18	1.21**	.39	4.96**	.53
trusted	.04	.21	2.87**	.41	3.93**	.57
friends	.21	.21	1.89**	.42	2.95**	.57

Notes: ** $p < .001$ * $p < .05$. "sw" refers to "social worker(s)", "sibs" refers to "siblings", "B" refers to logistic regression coefficient, and "SE" refers to "standard error".

Table 4

Summary of SWB questions according to reliability and validity tests

SWB questions	CTT	IRT		Dimensionality		Relationship with other variables
	alpha-drop	difficulty	discrimination	overall SWB	dimensions of SWB	
worthwhile	DECREASE	MODERATE	EFFECTIVE	HIGH	HIGH	SIG X2
life better	DECREASE	MODERATE	EFFECTIVE	MODERATE	HIGH	SIG X2
happy	DECREASE	MODERATE	EFFECTIVE	HIGH	HIGH	SIG X3
life satisfaction	DECREASE	MODERATE	EFFECTIVE	HIGH	HIGH	SIG X3
positive	DECREASE	MODERATE	EFFECTIVE	HIGH	HIGH	SIG X3
appearance	DECREASE	MODERATE	EFFECTIVE	HIGH	HIGH	SIG X3
worries	DECREASE	EASY	MODERATE	MODERATE	MODERATE	SIG X3
afraid of bullying	**INCREASE**	EASY	**NOT EFFECTIVE**	**LOW**	**LOW**	SIG X2
stigma	DECREASE	EASY	MODERATE	MODERATE	MODERATE	SIG X3
see mum	**INCREASE**	**HARD**	**NOT EFFECTIVE**	**LOW**	MODERATE	SIG X2
see dad	**INCREASE**	**HARD**	**NOT EFFECTIVE**	**LOW**	**LOW**	SIG X2
see sibs	**INCREASE**	**HARD**	**NOT EFFECTIVE**	MODERATE	MODERATE	SIG X2
trust carer	DECREASE	EASY	EFFECTIVE	HIGH	HIGH	SIG X2
trusted adult	DECREASE	MODERATE	EFFECTIVE	HIGH	HIGH	SIG X2
sw trust	DECREASE	MODERATE	MODERATE	MODERATE	MODERATE	SIG X1
outdoor	DECREASE	EASY	MODERATE	MODERATE	MODERATE	SIG X2
parity	DECREASE	MODERATE	MODERATE	MODERATE	MODERATE	SIG X2
learn life skills	DECREASE	EASY	MODERATE	MODERATE	MODERATE	SIG X3
hobby	DECREASE	EASY	EFFECTIVE	MODERATE	HIGH	SIG X2
second chance	DECREASE	EASY	EFFECTIVE	HIGH	HIGH	SIG X2
talk carer	DECREASE	MODERATE	MODERATE	MODERATE	MODERATE	SIG X2
like school	DECREASE	MODERATE	MODERATE	MODERATE	MODERATE	SIG X2
involved in decisions	DECREASE	MODERATE	EFFECTIVE	MODERATE	MODERATE	SIG X2
trusted	DECREASE	MODERATE	EFFECTIVE	HIGH	HIGH	SIG X2
friends	DECREASE	EASY	MODERATE	MODERATE	MODERATE	SIG X2

Notes: "sw" refers to "social worker(s)" and "sibs" refers to "siblings". Words in **bold** highlight a situation where a certain SWB question did not meet a certain psychometric criterion.

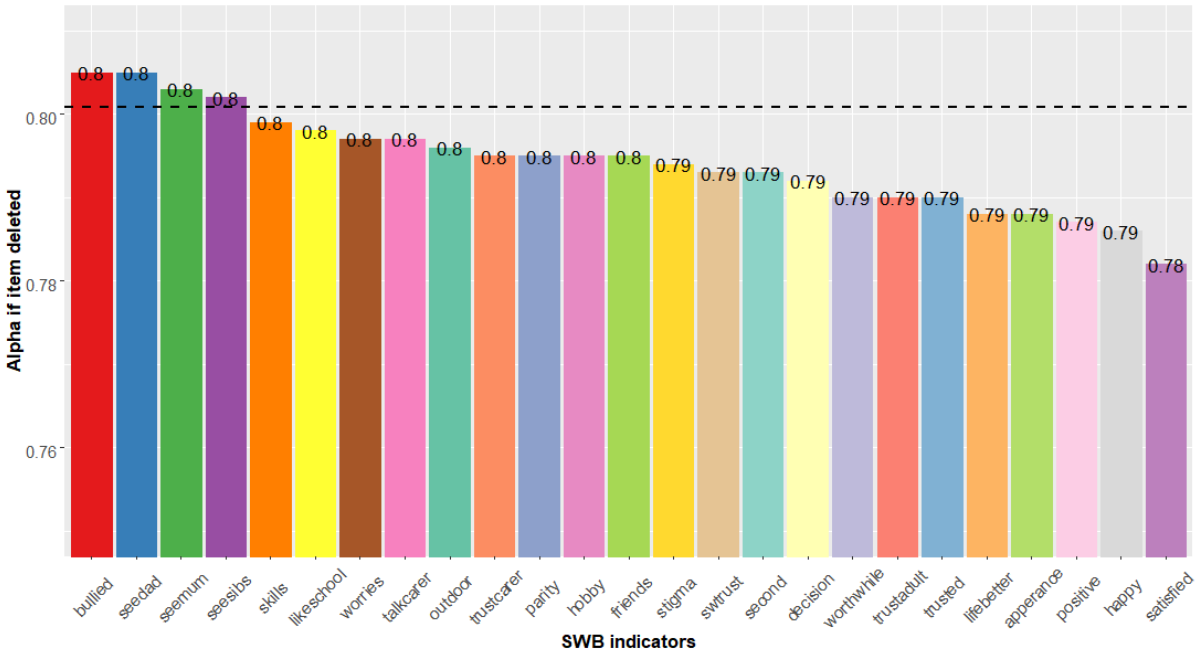
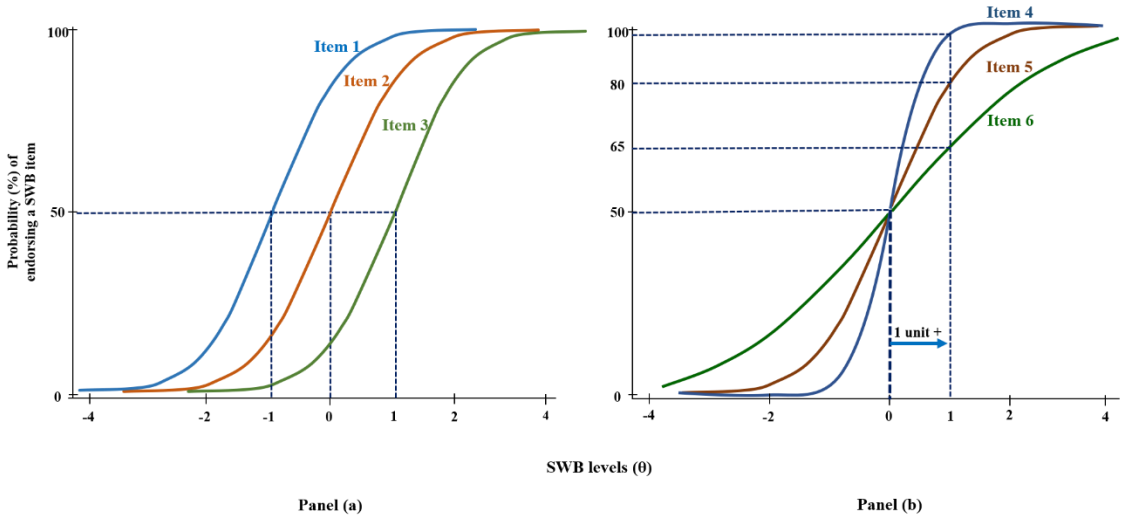
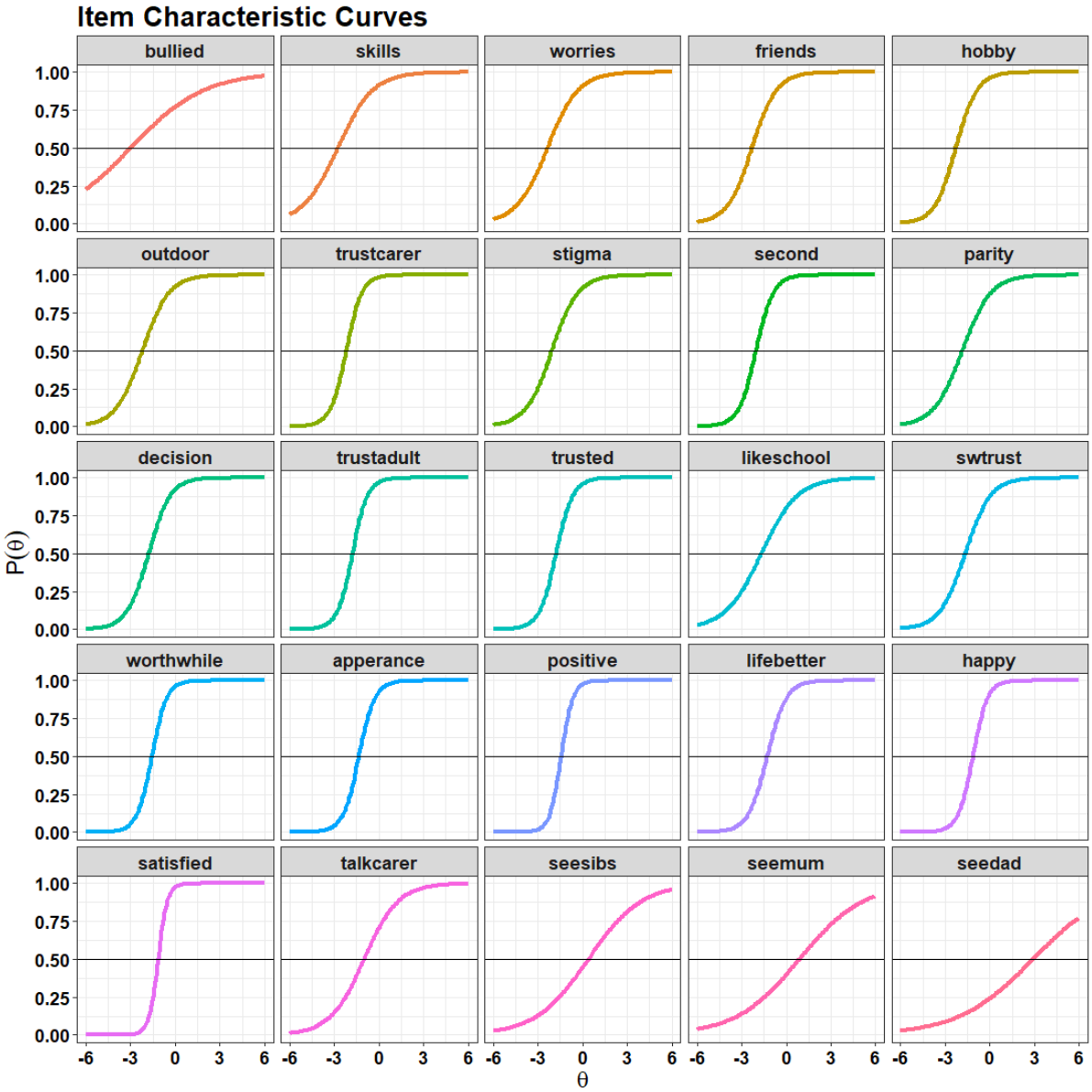


Fig. 1 Alpha coefficients of the remaining items if one item was dropped



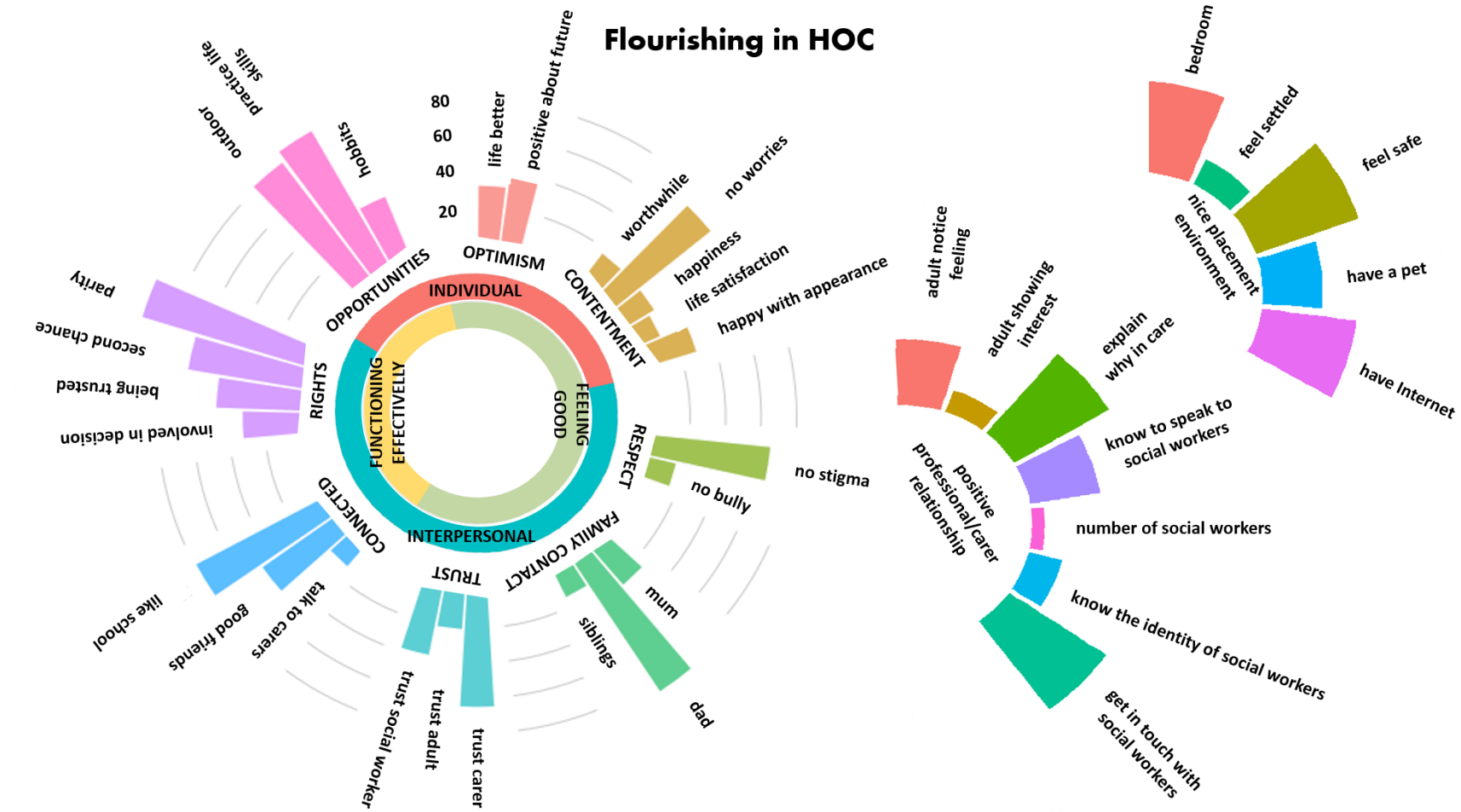
Note: This graph was adapted from Fox (2010).

Fig. 2 Item characteristic curves (ICCs)



Notes: The dots indicated the values on the X-axis given the probability of endorsement as 50%, i.e., the more left the position of the dot was, the easier a question was. "P(θ)" refers to SWB, "sw" refers to "social worker(s)" and "sibs" refers to "siblings".

Fig. 3 Item characteristic curves (ICCs) of SWB indicators



Note: R syntax for creating this figure was adapted from https://www.r-graph-gallery.com/. Accessed April 2019.

Fig. 4 Theoretical model of flourishing in OHC